



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,472	01/21/2004	Morris Dilmore	103485.143US2	2619

7590 10/16/2006

Christine R. Ethridge, Esq.  
Kirkpatrick & Lockhart Nicholson Graham LLP  
Henry W. Oliver Building  
535 Smithfield Street  
Pittsburgh, PA 15222-2312

EXAMINER

ALEXANDER, MICHAEL P

ART UNIT PAPER NUMBER

1742

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/761,472

Applicant(s)

DILMORE ET AL.

Examiner

Michael P. Alexander

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 21-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 21-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4 August 2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Claim(s) 1-2 and 21-35 is/are pending.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4 August 2006 has been entered.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 23-24 and 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill (Re. 28,523).

Art Unit: 1742

Regarding claims 1-2, 23-24 and 27-35, Hill teaches (col. 2 lines 1-24, col. 10 lines 22-33) an alloy steel in weight percent: Carbon 0.10-0.65; Nickel 3-12; Cobalt 0.2-7; Manganese 0-2; Silicon 0-1.5; Chromium 0-2; Molybdenum 0-3.5; Vanadium 0-0.5; Aluminum 0-2; Columbium 0-0.4; Tantalum 0-0.25; Tungsten 0-0.75; Boron 0-0.1; with copper replacing up to about one-third of the nickel; the maximum amount of sulfur and phosphorus being about 0.04%, balance essentially iron, which overlaps with the claimed amounts of C, Mn, Si, Cr, Ni, Mo, W, V, Cu, P, S and Al, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of each of the elements from the ranges disclosed by Hill because Hill teaches the same utility throughout the disclosed ranges. Also, Hill does not necessitate the addition of any Ca or N. Additionally, Hill teaches (Fig. 1) how to adjust the carbon and cobalt contents to obtain the claimed tensile strength. It would have been obvious to one of ordinary skill in the art to adjust the carbon and cobalt content in order to obtain the desired tensile strength as taught by Hill. Furthermore, the alloy steel of Hill would inherently have a Charpy V-notch impact strength of about 20-43 at -40 degrees F because Hill teaches (col. 1 lines 14-19) high strength and high toughness and teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I.

Claims 1-2, 23-24 and 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthony (US 3,068,095).

Regarding claims 1-2, 23-24 and 27-35, Anthony teaches (col. 1 lines 34-53) an alloy steel in weight percent: about 0.35-0.45% carbon; about 0.60-1.10% manganese;

Art Unit: 1742

0.025% maximum phosphorus; 0.025% maximum sulfur; about 0.60-1.50% silicon; about 0.80-1.50% chromium; about 0.15-0.40% molybdenum; tungsten may be substituted for molybdenum in ratio of 2:1; about 0.10-0.25% vanadium; about 0.85-1.34% cobalt; balance essentially iron, which overlaps with the claimed ranges of C, Mn, Si, Cr, Mo, W, V, P and S, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of each of the elements from the ranges disclosed by Anthony because Anthony teaches the same utility throughout the disclosed ranges. Also, Anthony does not necessitate the presence of any Ni, Cu, Ca, N or Al. Additionally, the alloy steel of Anthony would inherently have the claimed tensile strength because Anthony teaches (examples) comparable strengths and teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I. Furthermore, the alloy steel of Anthony would inherently have a Charpy V-notch impact strength of about 20-43 at -40 degrees F because Anthony teaches (examples) comparable high strength and ductility and teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I.

Claims 1-2, 23-24 and 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gondo (US 3,574,602).

Regarding claims 1-2, 23-24 and 27-35, Gondo teaches (col. 6 lines 27-45) an alloy steel having in weight percent: 0.05 to 0.80 wt. percent C, 0.05 to 2.00 wt. percent Si, 0.30 to 2.00 weight percent Mn, 0.05 to 6.00 wt. percent Cr, 0.01 to 0.30 wt. percent Ti, 0.005 to 0.30 wt. percent Zr and 0.0005 to 0.008 wt. percent B as basic elements, at

Art Unit: 1742

least one element selected from the group consisting of Sn, Sb and As in the range of 0.03 to 0.50 wt. percent, further 35 at least one element selected from the group consisting of Nb+Ta in an amount up to 1.00 wt. percent, W in an amount up to 1.00 wt. percent, Hf in an amount up to 0.50 wt. percent and Pd in an amount up to 1.00 wt. percent, and still further at least one element selected from 40 the group consisting of Mo in an amount of 0.05 to 1.00 wt. percent, Ni in an amount of 0.05 to 5.00 wt. percent, V in an amount of 0.005 to 1.00 wt. percent and Cu in an amount of 0.03 to 0.50 wt. percent, the balance being Fe and unavoidable impurities, which overlaps with the claimed ranges of C, Mn, Si, Cr, Ni, Mo, W, V and Cu, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of each of the elements from the ranges disclosed by Gondo because Gondo teaches the same utility throughout the disclosed ranges. Also, Gondo does not necessitate the addition of any S, P, N, Ca or Al. Additionally, Gondo teaches (Table) that the steel alloys would have "about" the claimed tensile strength. Furthermore, the alloy steel of Gondo would inherently have a Charpy V-notch impact strength of about 20-43 at -40 degrees F because Gondo teaches (col. 1 lines 14-24) comparable high tensile strength and toughness and teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I.

Claims 21-22 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill, Anthony or Gondo as applied to claim 1-2, 23-24 and 27-35 above, and further in view of Lyon (US 2,942,339).

Art Unit: 1742

Regarding claims 21-22 and 25-26, Hill, Anthony and Gondo do not specify using the steel for a bomb casing material. However, Lyon teaches (col. 2 lines 40-50) that low-carbon steels having high strength and ductility are conventionally used for making bomb casings. Since Hill, Anthony and Gondo teach low-carbon steels having high strength and ductility, then it would be an obvious choice well within the skill of the artisan to use the steels of Hill, Anthony or Gondo for making bomb casings.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-2 and 21-35 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 10:00 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



mpa

ROY KING   
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700